

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Amendment of Part 95 of the)
Commission's Rules to Establish a)
Very Short Distance Two-Way)
Voice Radio Service)

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**Reply by the Personal Radio Steering Group
to Oppositions to a Petition for
Reconsideration of a Report and Order**

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I. Background of the Petition and the Oppositions

On July 5, 1996, PRSG filed a *Petition for Reconsideration of a Report and Order (Petition)* requesting that the FCC make certain changes in the rules pertaining to the "Family Radio Service" (47 CFR 95 Part B and portions of Parts D and E). The *Petition* requested the FCC to modify the FRS rules:

- to prohibit FRS stations from repeating transmissions by other FRS stations or by stations in other radio services;
- to clarify the FRS prohibition of interconnection with the public switched telephone network;
- to establish certain hardware-based requirements that would encourage spectrum sharing by FRS users;
- to prohibit operation of FRS stations by remote control, or for the remote control of other stations or objects;
- to require that manufacturers provide a copy of the FRS Rules with each FRS unit;
- to relax certain technical specifications for FRS units operating in the 462 MHz band; and,
- to prohibit certain undesirable operating practices that are also prohibited in the Citizens Band Radio Service (CBRS) and in the General Mobile Radio Service (GMRS).

Oppositions to the PRSG *Petition* were filed by two parties: Radio Shack Division of Tandy Corporation (Tandy) and by Motorola, Inc. (Motorola). Both opposed in general making any changes in the FRS rules, but neither commented on all of the specific changes requested in the PRSG *Petition*.

II. The Need to Prohibit FRS Repeaters

In our *Petition*, we explained exactly how an FRS unit with a voice-actuated ("VOX") transmitter could be operated as a *repeater station*, repeating signals from another FRS station, or indeed from a radio station in *any* other radio service. The operation of such an FRS repeater

station from an elevated location, such as from an interior top-floor window ledge in a tall building, would greatly extend the FRS unit's communications range.

This could be done without making any internal modification to the FRS unit itself, and without physically attaching any "apparatus" as prohibited by 47 CFR 95.184(c). A "proximity-type acoustical coupling" could be made from the associated receiver audio speaker to the FRS unit without violating *any* provision of the current FRS Rules.

Tandy acknowledges¹ that "the FRS rules do not contemplate the use of FRS units in a repeater-station mode." Tandy conveniently ignores the fact that neither do the FRS Rules *prohibit* such use. In particular, Tandy failed to explain what existing FRS rule would prohibit the FRS repeater scenario describe in the PRSG *Petition*.

Tandy's opposition is therefore non-responsive to the PRSG *Petition*, and should be dismissed in this particular matter.

In its *Opposition*, Motorola failed to address the issue of FRS repeaters at all.

The FRS can meet its Commission-stated objective of providing *very short range* communications (thereby enhancing channel sharing and reusability) *only* by prohibiting FRS units from being so situated and controlled as to be operated as range-extending repeater stations. Absent specific hardware limitations (such as prohibiting VOX operations and prohibiting any external connectors for audio input and transmitter keying), and absent the *specific* operational prohibition of FRS units retransmitting other radio signals, it is inevitable that FRS repeaters *will* be installed and operated, and no current technical or operational regulation will prohibit this use.

Given the non-responsiveness of the Tandy and Motorola *Oppositions* to the PRSG request for specific language to prohibit the use of an FRS unit as a repeater station, the FCC should amend the FRS rules to incorporate the language we proposed for §95.193(f).

1 Tandy *Opposition* At page 6.

III. Transmitter Time Limits and External Power Supplies

There can be no meaningful compliance with the concept of “spectrum sharing”², with the requirement that the FRS operator must give priority to emergency communications³, nor with the requirement that FRS units be used only for *two-way* communications⁴ if FRS operating rules and hardware permit *continuous, uninterrupted transmissions*.

For radios powered only by an internal battery, transmission time may eventually be limited by battery capacity. However, to limit transmission time and to prohibit inappropriate *continuous* transmissions, additional restrictions are necessary. Two hardware options are available:

- Permit only powering from a limited internal battery (and prohibit the use of any external power supply); and/or,
- Require a transmitter time-out timer.

In its *Opposition*, Tandy reveals that it intends to manufacture and market an FRS transmitter that violates the *explicit* requirements (stated above) of “sharing the channel”, of “giving priority to emergencies,” and of “using FRS only to conduct *two-way* communications.”

“Parents, for example, may wish to *monitor their children at play nearby the home* using an external power supply for their FRS units.” [*Emphasis added.*]

— Tandy at III.A (page 5).

Clearly, what Tandy intends is to provide FRS hardware for use as “baby monitors” or perhaps for surreptitious eavesdropping devices. That is precisely the kind of one-way, continuous-transmission, non-spectrum-sharing use that **must be explicitly prohibited**. Namely:

- Such use is *totally* incompatible with spectrum sharing.

2 FRS Rule 1(b).

3 FRS Rule 3(d).

4 FRS Rule 3(a).

- The station operator would be incapable of *giving priority* to emergency communications because he or she could not hear other co-channel transmissions.
- The communications would be solely *one-way*.

In literature concerning Tandy's own product line, users are cautioned *not* to operate mobile radio transceivers while the internal batteries are charging. For instance,

“Do not operate the transceiver while you charge the battery pack. Using the battery charger mutes the transceiver's speaker.”

— Page 13, Owner's Manual for Radio Shack Model PRS-102,
10-Channel Personal Radio Service (GMRS) Transceiver

Tandy's opposition to a requirement to limit transmitter time or to prohibit using external power supplies is not just *disingenuous*, it conceals a more sinister intent to manufacture and market equipment whose routine use would **clearly violate FCC rules**. If Tandy wants to market a transceiver that derives its power from an external source (such as from a vehicular power system), then it should have suggested how the transceiver would otherwise be operated in compliance with the requirements in the FCC Rules for spectrum sharing. Tandy failed to give such an explanation, and its opposition is therefore non-responsive to our request for additional hardware requirements regarding transmitter time limits and pre-transmission monitoring.

Motorola acknowledges that it intends to incorporate a time-out timer in its FRS radios⁵, but fails to explain why this should not be required of *all* FRS transmitters.

IV. Relaxation of Certain Technical Standards

Tandy has either misunderstood or is attempting to misrepresent the PRSG position on the relaxation of certain technical standards for FRS operations in the 462 MHz band. From the beginning, PRSG has noted the likelihood of FRS interference to *overlapping* GMRS channels

5 “It is necessary to preserve battery life.” *Motorola* at footnote 7, page 3.

spaced only 12.5 KHz away in the 467 MHz band, where GMRS repeater receivers (with their advantageously sited antennas) operate.⁶

However, relaxing these technical requirements in the 462 MHz band would *not*, as Tandy claims⁷, require *dual* technical standards. FRS radios meeting the more rigorous requirements imposed on FRS operations in the 467 MHz band would *also* meet the PRSG-suggested relaxed standards when operated in the 462 MHz band.

Motorola's opposition to relaxing these FRS technical standards at 462 MHz seems to be based on "(easing) the transition of any future refarming of the GMRS frequencies." The FRS docket *is* the "refarming" of GMRS spectrum, and Motorola's concern is misplaced. If the optimistic projections of FRS proponents are realized, adoption of the FRS as an unlicensed service will forever lock into these frequencies the current technical standards. Further channel subdivision by mandating the retrofitting of millions of radios operated in an *unlicensed*, consumer-grade radio service would be virtually impossible.

V. The Need for Clarification of Prohibition Against Interconnection

Tandy's charge that the PRSG *Petition* posits "convoluted behavior"⁸ reflects Tandy's relative *inexperience* in the real world. PRSG is aware of many radio stations (both in GMRS and in other services) which either retransmit wireline audio, or impose radio-received audio onto the wireline network, but which stations are arguably *not* fully interconnected.

This collective PRSG experience reflects not some "convoluted" fantasy, as Tandy suggests, but *real-world* experience with radio systems that have pushed the existing interconnect restrictions and prohibitions in some other radio services beyond the breaking point.

6 At least Motorola parenthetically recognizes, at footnote 8, that the bandwidth of a GMRS signal is 20 KHz. Throughout this proceeding Tandy has refused to recognize that the 467 MHz FRS signals will overlap into the 467 MHz GMRS channels.

7 Tandy *Opposition* at III.A., page 6.

8 *Tandy* at III.B., page 7.

Tandy's opposition for further clarification in this matter is non-responsive to our request, and should be dismissed.

VI. A Requirement for Pre-Transmission Monitoring

The recommendations in the PRSG *Petition* for additional hardware requirements to enhance channel sharing and more spectrum-efficient operation are also based on PRSG's collective and extensive real-world experience. Tandy's opposition to implementing these hardware requirements reflects both its unwillingness to learn from the real world, and its failure to understand the long-term consequences of near-sighted cost-cutting.

An FRS that fails to incorporate hardware features intended to enhance channel sharing and efficiency will ultimately prove *more difficult* and *less satisfying* to use. The Commission wisely stated that regulation of usage should be primarily by *technical standards* rather than by complex operating rules.⁹ Opposition by Tandy and Motorola to adopting such hardware features is contrary to the Commission's stated intent.

Simply put: **Dumber radios require smarter users.** Smarter radios would *decrease* the need for user knowledge and voluntary compliance with good operating standards. Tandy's aversion to building "smarter" radios will have the inevitable consequence of restricting the popularity and utility of these devices.

VII. The Need for Additional Operating Restrictions

Nowhere in this proceeding have FRS proponents or the FCC acknowledged the implications, the *public perception*, and the ultimate, inevitable consequences of failing to prohibit in the FRS those types of disruptive or inappropriate conduct that FCC rules *already explicitly prohibit* in the CBRS and the GMRS.

⁹ *Report and Order*, WT Docket 95-102 at §17.

Not to prohibit such undesirable behaviors clearly implies to the user public that they *are acceptable* or at least are *not impermissible*.

For instance, Motorola doubts that forbidding the transmission of music, whistling, sound effects or any material to amuse or entertain “would have any real-world influence on the inconsiderate user who desires to engage in such activity.”¹⁰

The real-world experience is quite to the contrary! The existence of such prohibitions in the CBRs and GMRS rules *has* benefited local peer-enforcement efforts, and is essential to promote future radio-user-based efforts.

Motorola also doubts that the FCC’s future resources and priorities would likely result in enforcement of FRS rules. This is *precisely why* the user community needs these prohibitions explicitly stated in the FRS rules. The ability of the FRS user community to maintain some semblance of *sanity and civility* in this radio service is dependent on that community’s ability to identify inappropriate behavior (based on explicit prohibitions in the FCC Rules), and to ostracize, and if possible to isolate or to shun, those users whose behaviors violate these *officially established rules*.

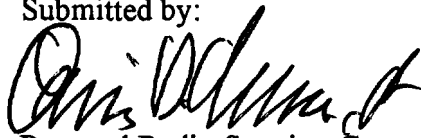
The opposition to adding to the FRS rules those prohibitions already in the CBRs and GMRS rules puts both Tandy and Motorola in the untenable position of suggesting that such behaviors should be acceptable and permissible in the FRS.

10 Motorola at page 2.

In Conclusion:

PRSG believes that the FRS Rules can be improved by the changes and additions requested in our *Petition*, and that greater user compliance with the intended use of this spectrum can be achieved by incorporating changes and restrictions into the FRS hardware itself.

Submitted by:

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Personal Radio Steering Group, Inc.

Corwin D. Moore, Jr.

Administrative Coordinator

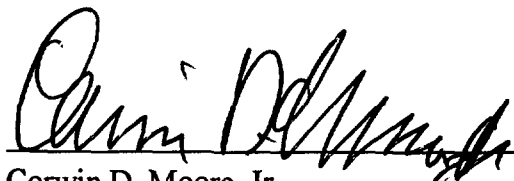
August 17, 1996

Certificate of Service

I, Corwin D. Moore Jr., Administrative Coordinator of the Personal Radio Steering Group Inc, do hereby certify that a copy of the foregoing "Reply by the Personal Radio Steering Group to Oppositions to a Petition for Reconsideration of a Report and Order" was also sent to each of the following by overnight shipping for delivery on Monday, August 19, 1996.

John W. Pettit
Richard J. Arsenault
DRINKER BIDDLE & REATH
901 Fifteenth Street, NW
Suite 900
Washington, DC 20005

Leonard S. Kolsky
Vice President and Director
Global Telecommunications Relations
Motorola, Inc.
1350 I Street, NW
Washington, DC 20005

A handwritten signature in black ink, appearing to read "Corwin D. Moore, Jr.", written over a horizontal line.

Corwin D. Moore, Jr.

August 17, 1996